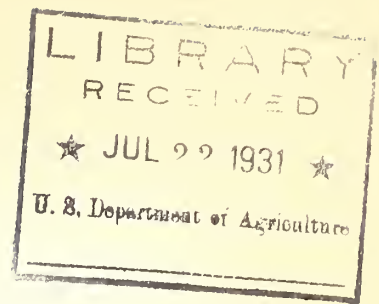


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



STEM RUST AND BARBERRY NEWS

Issued by

Division of Barberry Eradication

Volume II

July 15, 1931

Number 6

Not for publication without permission

Bureau of Plant Industry
U. S. Department of Agriculture

INDEX

	Page
The Redwood County Weed Control Plan - - - - -	72
Epidemiology - - - - -	73
Eastern Region - - - - -	76
Western Region - - - - -	78
Revised Quarantine Notice - - - - -	82
Personnel - - - - -	83

STEM RUST AND BARBERRY NEWS

Issued by

Division of Barberry Eradication

Volume II

July 15, 1931

Number 6

THE REDWOOD COUNTY WEED CONTROL PLAN

By Leonard W. Melander, Associate Pathologist.

Perhaps the costliest obstacle with which the Northwestern farmer has to contend (with the exception of low prices for his products) is weed control. Noxious weeds have gradually been gaining ground since the land was first cultivated. This especially is true of the areas where small grains are the predominating crops. The sow thistle has spread from Canada southward down the Red River Valley at the rate of twenty-five miles a year until now some of these weeds may be found in every county in the State of Minnesota. In some counties they constitute one of the limiting factors in crop production. In some places in the northern part of the State quack grass and Canadian thistle are equally as bad as sow thistle. They are the worst weeds in parts of southern Minnesota. However, all of these weeds can be controlled by proper cultural methods.

In recent years three weeds, that so far can not be effectively controlled by cultural methods, are becoming established in parts of Minnesota. These are leafy spurge, creeping Jenny, and Austrian field cress. To prevent these three weeds from getting a firm foothold they must be found and killed with chemicals before they become established.

Helping the Neighbors to Work Out Their Weed Problem

If every farmer knew the worst noxious weeds he could eradicate them as soon as he discovered them. To acquaint every farmer with the most important noxious weeds is a big task. However, if there is one farmer in each section of land who knows the worst weeds, he can help his neighbors. This was the idea that Nate Bovee, Agricultural Agent of Redwood County had when he worked out the Redwood County plan of weed inspection in the spring of 1930. Each township is organized as a unit under the township chairman who is designated by law as the weed law enforcement officer. There is a volunteer non-salaried worker, or "minute man," appointed to look after the weed inspection in each section. These men serve as educational agents for the county weed committee, assisting their neighbors in the identification of weeds and bringing them the latest information about methods of weed control. They have no law enforcing power unless they are deputized by the township chairmen.

The township organizations report to the county weed committee, usually consisting of the board of county commissioners, county auditor, and the county agricultural agent. The latter member looks after all of the informational phases of the plan. He does everything within his power to furnish the "minute man" with the available information concerning weeds.

Advantages of the Redwood County Plan

An organization of this kind is not temporary. Its efficiency will increase as the years pass by if the organization is kept intact. There are several outstanding advantages of the Redwood County weed inspection plan, i.e.

1. There is a man in each section interested in weed control.
2. The plan calls for no paid workers; therefore, no added tax burden is involved.
3. The regulatory organization is not disturbed.
4. There is a man in each section of land who learns to know the noxious weeds and the proper control measures.
5. New infestations of noxious weeds are reported before they get a foothold.
6. Uncut noxious weeds are reported to the township chairman who takes legal action if necessary.
7. A better cooperative understanding is developed between the regulatory authorities and those in charge of railroad right-of-ways, trunk highways, (State, county, and township) drainage ditches, and rented farms. Concerning the latter, much progress has been made in getting landlords and renters together on a practical weed control program.

The plan worked so well in Redwood County in 1930 that eighteen more counties adopted it in 1931. To date most of the counties are completely organized and are making good progress. The best indication of this is the increased interest in weed control. This is indicated by the large attendance of farmers at county and township weed meetings.

Attendance at Annual Meetings Indicate General Interest

Each year the State Commissioner of Agriculture calls a county meeting of all the township chairmen, mayors of towns, members of town boards, and others who are interested in weed control and clean seed. The two first groups are required by law to attend. Before the Redwood Weed Control Plan was adopted in these counties, fifty was a large attendance. The following are the 1931 attendance figures for some of the counties: Nobles, 167; Jackson, 240; Murray, 200; Cottonwood, 350; Lyon, 192; Redwood, 146; Brown, 216; Renville, 149; and Olmstead, 140. This shows what effect the Redwood Plan has on the interest manifested in weed control.

Barberry Eradication Has A Place in the Plan

One might ask, how does a program of this kind work in with the barberry eradication campaign? Common barberry is listed as a noxious weed in the weed laws of Minnesota. Therefore, an effort is being made to acquaint each "minute man" in the nineteen counties that have adopted the Redwood weed inspection plan, with common barberry. The first step was to send a one-page circular, showing how to identify common barberry, to every section volunteer in seventeen of these counties. None were sent to Meeker County because the county organization was not completed. The county agricultural agents sent the circulars out with their regular letters to the section men. In addition, barberry talks were given at several county and township meetings. It is intended to continue to do everything possible to get the section men acquainted with and interested in the eradication of common barberry. This will take considerable time but with a definite organization with which to work much can be accomplished over a period of years.

EPIDEMIOLOGY

(Reported by Miss Laura Hamilton)

On July 2 and 3, as stated in Rust Reported No. 4, Mr. Ukkelberg found primary infection of stem rust appearing over a wide territory in North Dakota and western Minnesota. Marquis wheat, barley, oats, and some fields of durum were infected. By July 6 the severity in fields examined was not over a trace, and the prevalence up to 15 per cent in the Valley as far north as Grand Forks, except in occasional fields, and only a trace in the northern part of the Valley and in northeastern North Dakota. In the lower part of the Valley grains averaged about milk stage, and were in excellent condition; but north of Grafton and outside the Valley the grain was less advanced and only in fair condition.

Outside of these northernmost sections, about which no predictions are being made yet, there appears to be no cause for alarm in the rust situation.

On a recent epidemiology trip into Wisconsin, Dr. Christensen conferred with Mr. Taylor at Madison and accompanied him on a short field trip through the station plots and in the vicinity of Madison.

The survey to determine the prevalence of physiologic forms of Puccinia graminis avenae being carried on by Dr. Cotter indicates that forms 2 and 5 are the most prevalent. (July 11)

Ohio - 8 East Broad Street, Columbus - Harry Atwood

On July 1 Messrs. Bauer and Holmes reported for duty on barberry survey in Ohio. This is the second summer for Mr. Bauer on the work and the sixth for Mr. Holmes. Our personnel is now complete. We have three squads of six-men each and one squad of five men engaged in intensive survey in Logan County.

In addition two men are making a check on barberry leads which have been reported to our office during the year as a result of our informational activities. Many of these leads are proving to be areas of escaped bushes where intensive scouting is necessary.

The Ohio Experiment Station has recently published a new Manual of Ohio Weeds. A description of the common barberry and a cut showing its characteristics are included. Our squad leaders have each been supplied a copy of this manual. The scouts are frequently asked by the farmers to identify some weed and this manual will help them to supply such information. Another bulletin entitled, "Diseases of Small Grain Crops" has been distributed to our field men.

The men working in Monroe and Zane townships report finding barberries on practically every farm. Not many bushes are found in any one place but they are distributed over a wide area. This makes intensive survey imperative. It is believed that the origin of these escaped bushes was a common barberry brought from Virginia over 75 years ago and planted on the farm now owned by Fred Connolly, of Monroe Township.

Excellent cooperation from the farmers of the community is reported by all workers. They are desirous of ridding their farms of barberry and the dreaded disease of black stem rust. In some places the farmers are scouting with the boys and helping them destroy the barberry bushes.

The local newspapers are also cooperating by giving us ample space for news articles. Recently one local paper featured a four column barberry article on the front page. This article was illustrated by three pictures. (July 10)

Indiana - Purdue Experiment Station Annex, West Lafayette. - W. E. Leer

On June 29, the annual training school for field men was held at Lafayette. Eight field men left on June 29 for Hamilton County where they worked three days in an area of escaped bushes which was last worked in 1927. About 400 bushes were found, most of them about one foot high. In the area several bushes were found which were three or four feet high and, much to our surprise, were producing fruit. In the report of barberry activities sent in on June 6, the following statement was made:

"In Hamilton County this spring while inspecting an area of escaped bushes, a freshly dug hole was noted, and upon examination yellow roots were found, proving that a barberry bush had been dug and probably taken to a home site and transplanted as the top of the bush could not be found any place near the hole."

As a result of the intensive publicity campaign in the county, the bush was located in Noblesville. The complete report of this interesting case has not been sent in by the field men. However, it is interesting to note that the bush was found.

On June 29, six men left for Johnson County to begin the systematic survey of that county.

The men who worked in Hamilton County for a few days went to Decatur County on July 2, to continue the systematic survey of that county which was started July 1, 1930. It is hoped that it will be possible to complete the systematic survey of Decatur County this year.

Late in June the field men spent several days in Fountain County where 33 escaped bushes were found and destroyed. (July 6)

Illinois - Post Office Building, Urbana - Robert W. Bills

The field organization of barberry men was completed on June 26, when eight State Department of Agriculture employees reported for duty. After a field trip in an escaped area in LaSalle County, these eight men were placed with our squads. We now have eight squads ranging from three to seven men each. These consist of 26 federal employees, 12 State employees, and 7 local employees.

Mr. Davis, assistant leader, is taking care of epidemiology investigations, and informational activities. Mr. Roll, assistant leader, is working with all of the squads on survey activities, dividing his time among the eight squads.

About 900 bushes have been destroyed in Illinois since April 1. Most of these have been found and destroyed in Lake Forest and Highland Park. One barberry bush found near Aurora, was responsible for a direct spread of stem rust to quack grass in the immediate vicinity of the bush, and to oats growing next to it in a field.

As a result of educational activities carried on by Mr. Davis in Ogle County this spring, in cooperation with the county superintendent of schools, Mr. George Cann, barberry bushes were reported by school children in 21 districts. Several reports have come in since the close of school. An active interest was created among all of the school children and teachers, and it is believed that the results will be felt over a considerable period of time. (July 11)

Michigan - Michigan State College, East Lansing - Francis B. Powers

The annual conference for field agents to be engaged in barberry eradication in Michigan was held June 30 at Michigan State College. Some of the topics discussed were: "History of Barberry Eradication," "Life Cycle of Black Stem Rust," "Other Common Rusts and Smuts of Cereals in Michigan," "The Blister Rust Campaign in Michigan," "Squad Organization and Conduct," "Expense Accounts, Reports, and Fiscal Regulations," "Epidemiology Reports," and "Plans for the Campaign in Michigan."

On July 1 the agents left for the field. One squad is located in Marquette County in the northern peninsula; one squad is doing resurvey work in St. Joseph, Cass, and Berrien Counties in the southwest corner of the State. These counties were previously covered in a second survey. Three squads are doing second survey work, one in Van Buren County, one in Kalamazoo County, and one in Jackson County. A small portion of Calhoun County remaining unfinished from a previous second survey is to be completed.

Barberries in Wexford and Grand Traverse, northern counties of the southern peninsula were very badly rusted this spring. Barberries in the southern part of the southern peninsula are reported as having very little rust, although they are in the grain growing regions. Wheat and rye in the southern tier of counties are being harvested. Oats are reported to be in the milk and soft dough stages. Very little stem rust is evident.

Wednesday morning, July 8, the Leader gave an illustrated lecture to 250 boys attending the meeting of the south central section of Michigan 4-H Club champions at Michigan State College. Much interest was manifested by the boys in the rusted barberry and the rusted grain which was displayed.

An effort is being made to dispose of rust susceptible barberries existing in botanical gardens of colleges throughout the State. Those at Michigan State College and Kalamazoo College have been removed. Other plantings known to exist will be eradicated in the near future. This will prevent the possibility of hybridizing with *Thunbergii* and distribution of seed by birds, as well as the possibility of rust spread. (July 8)

Wisconsin - State Capitol Annex, Madison - Vern O. Taylor

Survey work in Wisconsin is progressing very well and the Leader is pleased with the reports coming from all crews. The new men selected for survey work are making excellent showings as barberry agents.

The squad in Dodge County is continually running into small areas infested with bushes, and one very definite rust spread to winter wheat, rye, and barley has been noted.

The crews working out of Black Earth in Dane County have found only 60 bushes during June. This area is between Black Earth and Sauk City,

where the country is very rugged and thickly covered with brush. The rust has been more severe in the country being worked by these squads than in any other part of the area being surveyed in the State. A few fields of winter wheat have shown 100 per cent prevalence, and as high as 80 per cent severity.

In Potosi Township in Grant County more than 3,000 bushes and seedlings have been found, but they were not heavily rusted. Another squad working on second survey in Grant County has found no bushes to date.

The Leader talked to 200 4-H Club members at the Dodge County 4-H Club picnic on June 27. Two of the members had reported common barberry bushes as a result of the intensive educational program in that county, and they were awarded their Rust Busters' Club medals at that time. It was interesting to note how much of the material they had retained. Questions on identifying characteristics were asked the club members and correct answers were sung out without having to ask for volunteers.

Plans had been made to visit five 4-H Club camps this summer, but due to the uncertain times the farmers are not allowing their children to attend. Three out of five camps that were planned have been cancelled, and there has also been much controversy over the State Fair. We are finally assured of that, however, and are going ahead with plans for a demonstration. (July 9)

WESTERN REGION

Minnesota - University Farm, St. Paul - Leonard W. Melander

On July 1 the Minnesota barberry workers conference was held. A discussion of fiscal matters was first on the program, later the group proceeded to an area of escaped bushes near Anoka. The men also spent some time in looking over the results of treating common barberry with ethylene oxide. At noon a picnic dinner was served. The entertainment during the lunch hour consisted of trying to keep from getting wet by scrambling under tarpaulins. After dinner there were three very inspiring talks given by Dr. E. M. Freeman, Dr. E. C. Stakman, and Mr. D. G. Fletcher, respectively. After the talks a tract of woods and underbrush was scouted for barberries. This was for the purpose of demonstrating to the new men that barberries might be found growing in most any place. Late that afternoon the crews proceeded to their field headquarters. (July 7)

Iowa - Morrill Hall, Iowa State College, Ames - D. R. Shepherd

Twenty-four men are now surveying for barberry bushes in Woodbury, Plymouth, Carroll, Greene, and Webster Counties. Four men were stationed in Linn County during the latter part of June working out areas that had been reported by rural school children of that county. More than 800

bushes were destroyed as a result of these leads. Mr. Brown has been making rust observations and looking up reported plantings of barberry bushes in northwest Iowa during the latter part of this month. A total of 1438 bushes and 1529 seedlings has been found by the men since they left for the field on June 18. The largest number of these bushes were destroyed in Linn County. However, several plantings have been found in each of the counties where the work is being conducted.

Mr. K. R. Bower, who is in charge of the work in Webster County, met with two groups of Farm Bureau men during the past week and discussed with them the nature of our project in that county. The Leader gave a twenty-minute radio talk over Station W.O.I. on Friday, June 26; the subject of this talk was "The Necessity for and the Progress of the Barberry Eradication Work in Iowa."

A cooperative program has been worked out with the Extension Service in Iowa whereby the Leader will have an opportunity to take part in some of the Short Course work that will be conducted in Iowa during the coming fall and winter season. Through this program it will be possible for us to present our subject to groups of farmers throughout the counties where we plan to work next year. The Extension Pathologist has included Barberry Eradication and Black Stem Rust in his Short Course program.

Black stem rust can be found in most all fields of wheat, oats, and barley throughout the State. The infection varies a great deal with the locality. Stem rust infection in oats ranges from a tr-5%/tr in barley, oats tr-4%/tr/5%; wheat 5-10%/tr-20%. Leaf rust can be found very prevalent in all fields. Orange leaf rust in wheat runs as high as 60% infection on 80% of the leaves. Only a trace of crown rust has been reported so far this year.

During the past two weeks the Iowa small grains have matured very rapidly. Binders can be seen in many fields of winter wheat and barley and in fields of oats in Woodbury and Monona Counties. With the exception of late oats, the small grain crops will not be damaged by black stem rust. Oats and barley will suffer to some extent from heat damage. (July 7)

District No. 1 - State College Station, Fargo, N. Dak. - G. C. Mayoue

Montana and North Dakota. The summer field campaign in Montana was opened June 26 when assistant leader Twilde and 9 agents met with Mr. Popham, Professor Morris and state college officials at Bozeman to complete final preparations before leaving for their field stations.

With the men divided into three squads, they are quartered in Kalispell, Rollins, and Missoula, regions where many escaped bushes from old original plantings have been found. Since the actual field work was begun June 28, seedlings have been found in the region about Missoula, according to Mr. Twilde. On July 1 the 11th man was added to the field force.

Fortunately, all survey is being carried on in the western part of the State which has not been affected by any such drought as has burned up the eastern part.

No stem or leaf rust has been reported to date, although barberries have been found bearing slight to moderate infections.

After completing a three-day intensive school in cereal rusts, 18 agents left for their field stations in North Dakota on July 2. This three-day course was inaugurated this year by District Leader Mayoue, being given with college credit as part of the regular summer school session at the State College. Approximately 50 were enrolled. The work was divided into lectures, laboratory, and field trips. Unfortunately Dr. E. C. Stakman was unable to be present as had been scheduled.

By July 3 all field men had reached their stations and begun work in McIntosh and Sheridan Counties and along the Missouri River in Burleigh and Morton. Reports of the devastating drought in Mountrail and portions of McLean Counties brought a change in the second survey plans which had originally called for work in those regions. Accordingly, work on the Missouri River in the long suspected area around Mandan and Bismarck was begun.

To definitely establish the possibility of work in Mountrail County, the District Leader recently completed a short trip through the northwest part of the State. He found that earlier reports had not been exaggerated.

Spring seed, carrying hopes of a fall crop, continues to lie buried in the black billows of sandy loam that only add to the desert bleakness of the yellowed pasture land. Never before have these people experienced such conditions as at present. They are killing their lambs so that there may be enough pasturage for the sheep. Cattle must either be fed on feeds shipped in from other parts of the State, killed, or shipped off - some being even too poor for the latter. Coupled with the general financial depression, this drought has produced a type of hysteria bringing frequent tax-payers meeting of Red Cross-fed farmers.

Beginning the summer fair schedule with the Northwest Fair at Minot, assistant leader Roberts and agent Lockrem arrived at the edge of the drought area July 3 as rain began falling for the first time in several months. Despite the rain and preceding drought, the attendance has been fair.

Featuring the educational work being done with the National Rust Busters Club is a mechanical display that is proving very effective as a drawing attraction for the demonstration. A brief description of the display is found in part of a news story that appeared in the Minot Daily News:

"Children and adults alike in large numbers have been seeing a group of school children with their teacher and an agent of the United States Department of Agriculture come out of a miniature school house and travel to a barberry bush growing beside a rusted grain field.

"With his salt the barberry agent kills the bush which eventually disappears, taking with it the poor field of rusted grain. The barberry gone, a clean field of grain appears. The children then leave the stage to return again from the school house as a bell rings announcing their dismissal."

The demonstration is housed and shipped in a case 6 feet long and $2\frac{1}{2}$ feet high. It was just recently completed, the art work being done by Mr. G. D. George of the University Farm, St. Paul and the remainder by Mr. Roberts. Following its use at Montana and North Dakota fairs the display will be used in stores and at conventions throughout the State. (July 9)

District No. 2 - State College Station, Brookings, S. Dak. - R. O. Bulger

Extremely hot and dry winds during the latter part of June and the first few days of July have damaged small grain crops considerably in South Dakota. Premature ripening has caused the kernels to shrivel, and this connected with a thin, short stand to begin with will mean only about half a crop over much of the State. Cooler weather has prevailed since July 4, and some moisture has fallen. Late crops in the northern and northeastern part of the State will be benefited. Corn in general is exceptionally good for this time of year.

In Nebraska crops are much better. In the eastern part they are close to normal, but in the western part they have been damaged by heat and drought.

In spite of these conditions, the squad leaders report that the survey is going fine. In general the people are sympathetic and cooperative, more so than in former years.

Informational work during July in Nebraska will consist of club camp activities at all of the camps in the eastern part of the State. In South Dakota informational work will consist of plans and preparations for fair demonstrations and working with the field men.

Stem rust development has been retarded considerably to date by the hot dry weather. No appreciable damage is expected in either Nebraska or South Dakota. Some late fields may suffer a small amount of loss if weather conditions turn more favorable. (July 7)

District No. 3 - Agricultural College, Fort Collins, Colo. - E. A. Lungren

Colorado - During the month of June second survey was conducted in Fremont and Pueblo Counties. Approximately 20% of Fremont County was surveyed and 419 barberry bushes were found, most of which were escaped bushes. The barberries were found scattered in orchards, along ditches, and in the hills.

As a result of a barberry tip an inspection of the Palmer Estate in El Paso County, in the foothills southwest of Palmer Lake, 51 very large barberries were found.

In Pueblo County, city survey was conducted during the month and also the strip of Fountain Creek from the county line to Pueblo. Twenty-nine large bushes and 15 seedlings were found.

The county agent's letters on our rural surveys have proved to be very effective. It identifies the men and makes the work more pleasant, and in many cases, the farmers have spotted a barberry before the men get there by the use of the circular "Bust the Rust" which accompanies the letter.

We have also had window displays in many towns and the newspapers have given stories on the progress of the survey.

In July we plan to give a demonstration and field trip at the 4-H Club camp which will be held at Beulah in Pueblo County.

Western Nebraska.— Approximately 55% of Cheyenne County was surveyed during June and 2 large bushes were found on 2 properties. One was lightly infected. The weather conditions were extremely dry during most of the month and many fields of grain were plowed under. One property with a large barberry was found near the place where the 4-H Club camp held its meetings. Seven counties of western Nebraska were represented at this camp. We gave a demonstration in the morning and in the afternoon took the children over to the property to scout for common barberry. It was not long after they scattered out before two girls located the large bush. A treating demonstration was then given.

The winter wheat in western Nebraska has only a trace of stem rust. At present many fields are being cut.

Wyoming - Campbell and Converse Counties were completed during June. One large bush was found in Douglas. No infection could be found. Weather conditions in eastern Wyoming were extremely hot and dry during most of June. In northern Campbell County a considerable amount of the grain dried because of hot winds. To date no stem rust has been found in the counties worked in the State.

At the present time we are working in Niobrara and Johnson Counties. The county agents have circularized the counties with letters introducing the work and the men. Demonstrations at several club camps have been planned for July. (July 9)

REVISED QUARANTINE

Following a public hearing on July 9 before the Plant Quarantine and Control Administration for the purpose of discussing a proposed revision of Quarantine 38, there was issued Quarantine 38(Revised), effective August 1. Copies of this were promptly sent to all Leaders and as soon as an additional supply is available more will be sent for use in answering inquiries.

PERSONNEL

Mr. Lawrence M. Ames, who is stationed at the Farlow Herbarium, Cambridge, Mass. was in the Washington Office from July 8 to 14, conferring with officials of the Plant Quarantine and Control Administration and Mr. Meier in preparation for conducting inspection work under the new quarantine law.

Mr. W. L. Popham has been in Washington for conferences since July 9.